

REMARKS

A. OVERVIEW

Claims 1-52 are pending in the present application. In the prior action, the Restriction Requirement was withdrawn. The present response addresses the issues raised in the most recent Office Action regarding all claims 1-52. Entry and reconsideration is respectfully requested.

B. AMENDMENTS TO THE SPECIFICATION

Pursuant to change in status regarding the U.S. application incorporated by reference in the Specification, the Specification has been amended to now provide the issued patent number for that application.

C. §102 REJECTION OF CLAIMS

Claims 20-24, 27-29, and 40-52 stand rejected as being anticipated by Whitten et al., U.S. Patent No. 6,732,014 ("Whitten"). The Office Action alleges that the apparatus limitations in these claims are disclosed in Whitten. The action then takes the position that method claims 1-19 and 30-39 are anticipated by Whitten on the basis that the methods in these claims use the apparatus of the prior described apparatus claims.

These rejections, as well as the Examiner's response to Applicant's arguments distinguishing Whitten, have been carefully reviewed. These new rejections are respectfully traversed for at least the following reasons.

To present a *prima facie* case of anticipation under § 102, a single reference must disclose all the critical elements of Applicant's claimed invention, in the arrangement of the claim. The Office Action takes the following position:

1. That Whitten discloses all its detectors monitor each emitter (Office Action page 2, first full paragraph).
2. That Whitten discloses all emitters are intentionally turned off for a given time period between sequential firing of individual emitters (Office Action page 2, second full paragraph).

3. That Whitten discloses monitoring all detectors while the emitters are off to check for error or malfunction (Office Action page 3, first full paragraph).

For the reasons set forth in Applicant's prior response, it is respectfully submitted Whitten does not disclose any of those critical limitations of Applicant's claims. However, to advance prosecution of the present application, the present response amends the independent claims to clarify aspects submitted to clearly differentiate Applicant's claims from Whitten.

First, purpose for turning all emitters off while monitoring the state of the detectors is explicitly added to independent claims 1, 20, 30, 40, and 50. Specifically, language has been added to describe that an output signal is created if any detector indicates an on state while all emitters are in the off state. It is pointed out that this portion of the claims requires two concurrent things. It is not just that all emitters are turned off for a period of time. This is combined with the limitation that all detectors are monitored during that period of time and an output signal is generated if any detector falsely indicates an on state.

Whitten has no disclosure of that combination of limitations. Nowhere in Whitten can it be found that all emitters are off for a given period of time while all detectors are concurrently monitored for a condition indicative of an error. To the contrary, as cited in Applicant's prior response, Whitten teaches the next emitter in its sequence is immediately turned on once its corresponding detector detects the emitter's signal. (See, e.g., Whitten column 4, lines 19-67).

The benefit of this combination of functions in Applicant's claims is described in Applicant's specification in numerous places. The focus of Applicant's invention is to provide a better optical sensing system to determine if a vend has or has not occurred. "Pausing" to turn all emitters off, while monitoring all detectors, allows the system to check for correct operation of the system on a regular basis. It does not rely on an assumption that the optical system is always operating correctly. It self-checks itself. Consider this example. If one of the plurality of detectors is indicating an "on" condition even when no emitter is "on", the detector is likely malfunctioning. It could, therefore, be stuck in an "on" condition. When the sensing system polls the detectors when each emitter is "on", that malfunctioning detector would stay "on". This

would be interpreted by the sensing system to mean that there has been a successful vend of a product. However, in fact no product may have been dispensed. The machine would not have given the customer a product and the customer could not obtain a return of the customer's money or credit because the machine thinks the product has been vended. This could lose business for the owner/operator of the machine. It could cause frustration on the part of consumers and the operator of the machine. It could even lend to damage or vandalism the machine. Thus, the approach of Applicant's pending claims is to provide an answer to that issue by repeatedly checking to ensure correct operation of those optical components.

It is counter-intuitive to turn all emitters off for a period of time on a repeated basis. Whitten, for example, teaches that it must immediately sequentially turn on its emitters extremely quickly to ensure nothing slips past while an emitter is off. Thus, Applicant's claims go in a different direction and counter-intuitive direction than Whitten. There is simply no disclosure of Applicant's claimed combination in Whitten.

Secondly, it is respectfully traversed that Whitten discloses monitoring all detectors when any single emitter is "on". As set forth in detail in Applicant's prior response, Applicant acknowledges that Whitten discloses that it can have more than one detector monitoring any emitter. But what Applicant disagrees with is the Examiner's conclusion that Whitten discloses all detectors monitor each emitter.

Applicant's prior response gives explicit quotations from Whitten on this point. Whitten intentionally matches up a detector directly across from an emitter (see, e.g., Whitten column 4, lines 19-67). In one embodiment, Whitten uses that single matched detector with the detectors immediately to each side of it to monitor an emitter. But this is a subset of the total number of detectors. Whitten's entire specification is written towards a subset of detectors monitoring for each emitter -- either corresponding detector across from the emitter alone or with no more than two adjacent detectors. It calls that subset of detectors the "corresponding detector" or "the emitter's corresponding detector and each detector on either side of the corresponding detector" (Whitten column 4, lines 19-67 to column 5, line 25). Note at column 4 line 58 to column 5 line

25, Whitten specifically describes and intentionally monitoring only a maximum of three detectors per emitter. Furthermore note how Whitten discusses "infrared emitter/detector sets" and even states at column 6, lines 9-19 that "during the monitoring mode, it is necessary to monitor each of the emitter/detector sets separately because of the potential for light bleed-over from adjacent emitters". This clearly describes that a limited subset of all emitters is turned on at any one time and a limited subset of all detectors is monitored by the system for its corresponding subset of emitters. Whitten intentionally disregards detectors not in the corresponding matched subset for an emitter.

In direct contrast, Applicant's independent claims specify when an emitter is "on", all detectors are monitored to determine whether or not they all "see" that emitter. This is a substantial difference from Whitten. Whitten describes quickly sequentially firing its emitters and monitoring no more than the detector directly across and detectors on each side of that detector. Whitten describes spacing these corresponding matched emitter detector subsets close enough so that the smallest item to be vended cannot fall between adjacent beams. In contrast, Applicant's specification describes how its emitters fan out their beams and cover a triangular section of the dispensing area when "on" (see illustrations, for example, at Applicant's Figures 2A and B). Applicant's paradigm is to have all detectors watched for each emitter so that they monitor more than simply directly across from the emitter. Whitten focuses on emitter and detectors directly across from one another.

This explicit difference from Whitten is expressed in Applicant's independent claims. See for example Applicant's claim 1, element b. In order to advance prosecution, element d. has been amended to specifically and explicitly clarify that all detectors are monitored during an "on" time for an individual emitter. Whitten expressly either monitors each emitter with one detector directly across from it or with a subset of total detectors (one detector directly across from it plus two additional detectors on each side). This is not all detectors. Therefore it is respectfully submitted under § 102 there is not a disclosure of another critical limitation of Applicant's independent claims.

The Office Action page 3, first full paragraph, suggests that additional claim language might effectively distinguish Applicant's independent claims from Whitten. It is respectfully submitted Applicant has followed that suggestion in its amendments to the independent claims. Those amendments are intended to clarify an aspect of the invention to make it clear how a possible error in the optical system can be detected by monitoring all detectors when no emitter is on. It is submitted the independent claims in Applicant's application are not anticipated for at least the foregoing two specific critical claim limitations. It is therefore respectfully submitted Applicant's independent claims are allowable over Whitten. Furthermore the dependent claims from those independent claims are likewise submitted to be allowable for those reasons.

D. § 103 REJECTIONS

Claims 25 and 26 stand rejected as being obvious under § 103 on the basis of Whitten. This rejection is respectfully traversed. The Examiner takes the position that specific spacing between emitters and detectors is within the skill of those of ordinary skill in the art. Claims 25 and 26 are dependent from independent claim 20 and are submitted to be allowable for the reasons expressed in support of claim 20. Specifically, Whitten does not disclose or teach the critical limitations from Applicant's claims shown above to be missing from Whitten. In fact, Whitten teaches away from those limitations. Whitten discloses teaching that each sequential emitter should be turned "on" immediately following the preceding emitter. Whitten also discloses and teaches monitoring only a subset of detectors when each emitter is "on". Thus, the complete absence of any teaching or suggestion of these limitations, in the combination of Applicant's claims, is submitted to patentably distinguish Applicant's claims 25 and 26 patentably from Whitten.

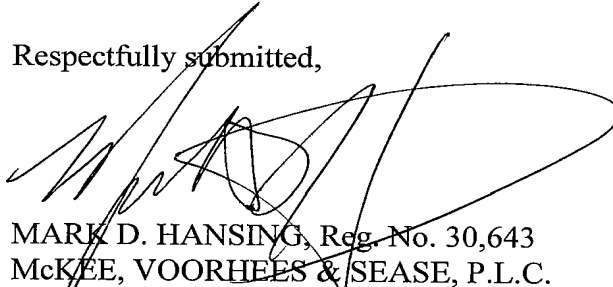
E. CONCLUSION

It is respectfully submitted all matters raised in the most recent Office Action have been addressed and remedied and that the application is in form for allowance. Favorable action is respectfully requested.

This is a request under the provision of 37 CFR § 1.136(a) to extend the period for filing a response in the above-identified application for three months from June 28, 2007 to September 28, 2007. Applicant is a small entity; therefore, please charge Deposit Account No. 26-0084 in the amount of \$510.00 to cover the cost of three months extension. Any deficiency or overpayment should be charged or credited to Deposit Account 26-0084. It is not believed that any additional fees or petitions for extension of time are required for entry of this response but if any have been inadvertently overlooked, please consider this a request therefore and charge any required fee to Deposit Account No. 26-0084.

Reconsideration is respectfully requested.

Respectfully submitted,



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